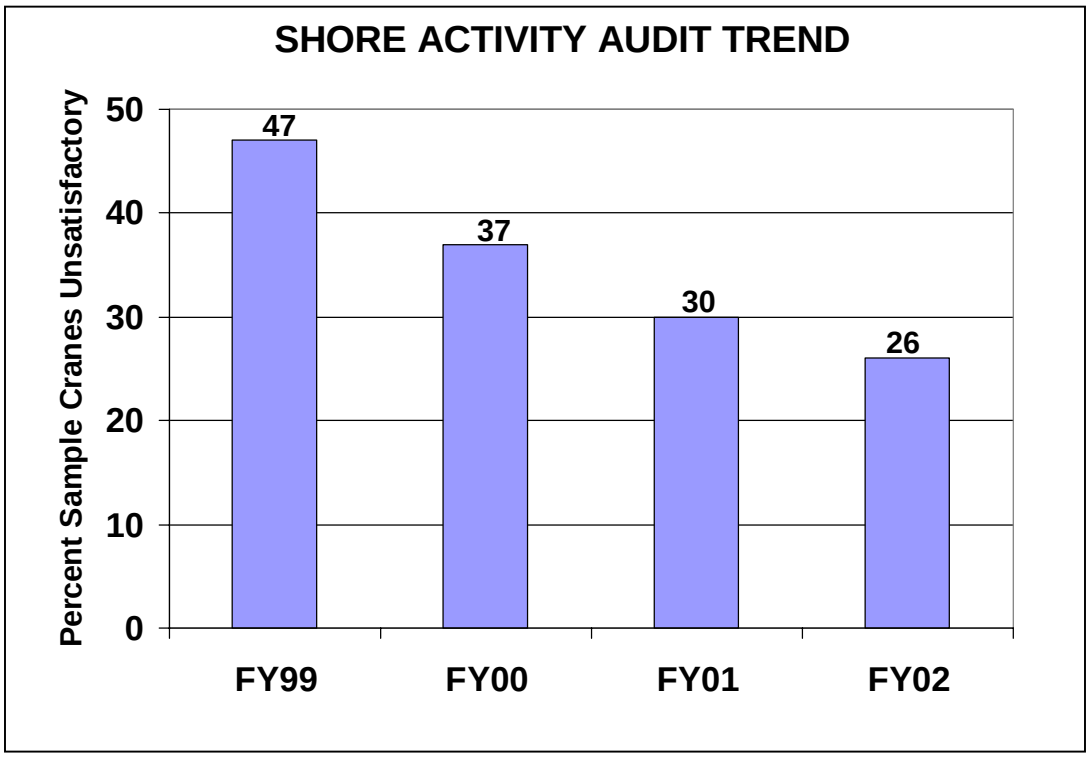
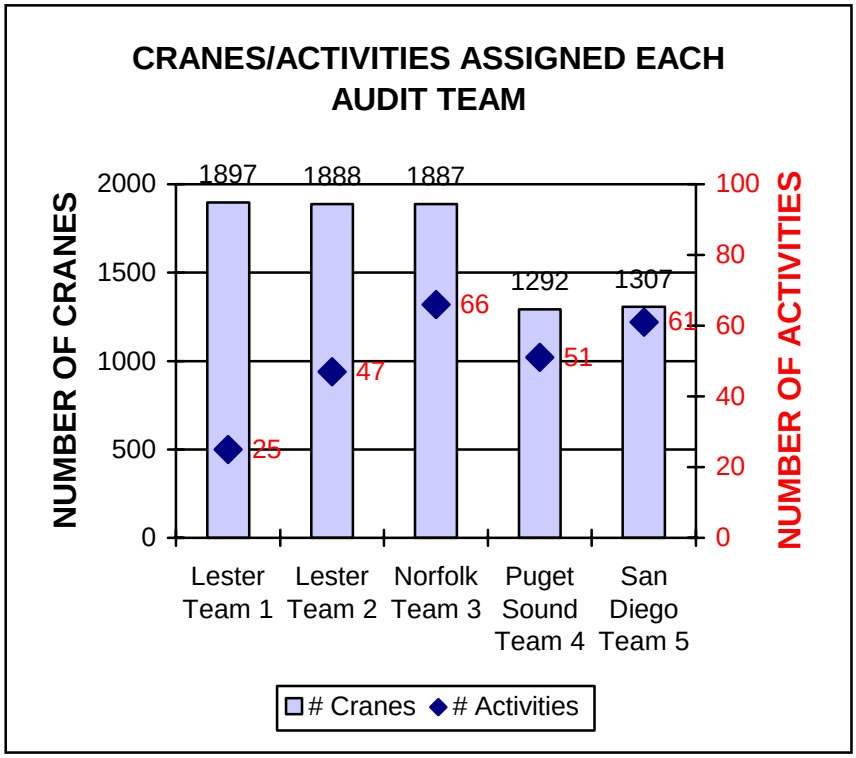
# AUDITS

During FY02, our auditing of Navy shore activities continued to progress and has proven to be an essential effort to facilitate needed improvements at the various activities, as well as reinforce program adherence to the requirements of NAVFAC P-307. An innovative approach to the auditing component of our mission has contributed to major continuing improvements in the overall condition of the weight handling programs and widely acknowledged by activity WHE managers. Our audit teams provide a rigorous compliance review with an immediate follow-up offer and demonstrated willingness of our team to provide assistance in correcting identified problems. This audit process (along with the integral coaching assistance that occurs during the audit) has continued to improve the safety and reliability of our naval shore activities' weight handling equipment and operations. Another audit innovation is regional WHE audits, which minimize the impact on regional service providers.

For the fourth straight year, the unsatisfactory rate for the condition of the equipment improved as shown below.



Audit teams 1 and 2 operate out of Lester, PA (Navy Crane Center headquarters). Teams 3, 4, and 5 are located in Portsmouth, VA, Poulsbo, WA, and San Diego, CA, respectively.

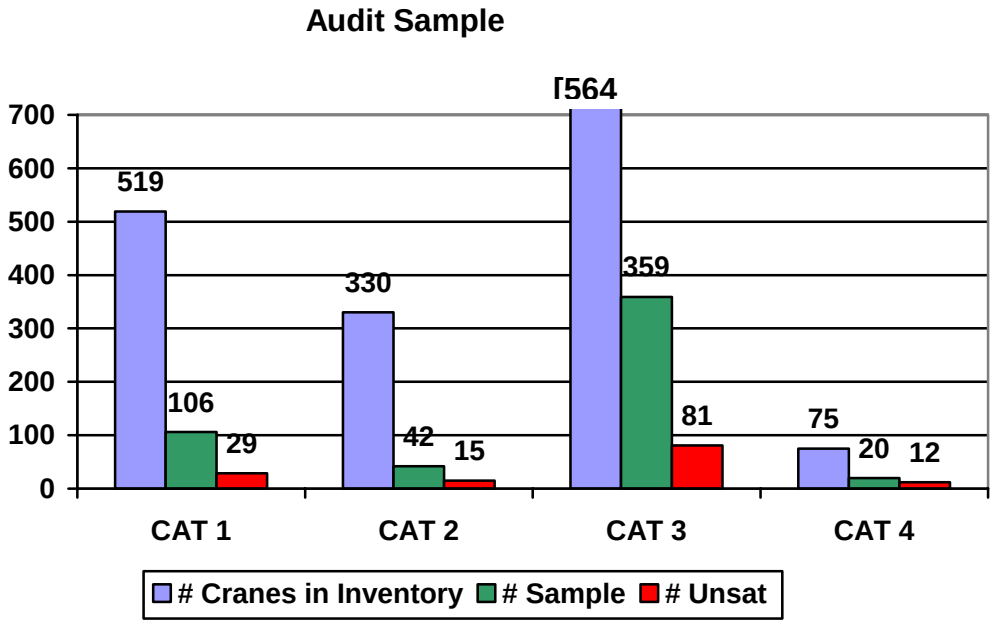



Approximately 250 naval shore activities and shore-based operating forces own and operate weight handling equipment. During FY02, audit teams completed 139 WHE program audits. Our responsibilities include auditing all activity WHE programs every 2 years at a minimum and suspending unsafe crane operations, if necessary, at any activity.

This year's audit findings and summary data indicate continued incremental program improvement. For those few activities that have failed to improve or slipped back to deficient programs, additional claimant intervention may be required. As a result of the continuing audit program and the NCC NAVFAC P-307 WHE training provided to most all activity WHE personnel, all activities have an increased awareness of program requirements. However, additional effort is required to ensure completion of continuing and necessary on-the-job and advanced specialized training requirements during FY 03 and consistent program execution to attain and maintain full compliance with NAVFAC P-307.

## Equipment Condition

In FY02, the audit teams sample inspected/load tested 527 cranes out of a total inventory of 6,565 for the activities visited. The number of cranes determined to be unsatisfactory by the audit teams continued on a favorable downward trend. Of all cranes sampled 26 percent were unsatisfactory. By contrast, 30 percent were unsatisfactory in FY01, 37 percent in FY00, and 47 percent in FY99.




| Percent of Unsatisfactory Cranes | | | | | |
|---|---|---|---|---|---|
| **Activity Type** | **FY98** | **FY99** | **FY00** | **FY01** | **FY02** |
| Naval Shipyards (SPS Cranes) | 17 | 19 | 19 | 21 | 10 |
| Naval Shipyards (GPS Cranes) | 24 | 18 | 16 | 13 | 12 |
| Naval Public Works Centers | 52 | 35 | 34 | 28 | 33 |
| Naval Surface Warfare Centers | N/A | 48 | 29 | 36 | 32 |
| Naval Air Stations | N/A | 66 | 42 | 42 | 28 |
| All Other Naval Activities | N/A | 51 | 36 | 28 | 26 |

## TOP 10 DEFICIENT CONDITIONS ON CRANES INSPECTED (CATEGORIZED MOST TO LEAST)

1. Brakes not adjusted to manufacturers' specifications (air gaps, spring length, equalization, etc.).
2. Testing deficiencies (not all components tested, incorrect test load, test loads exceeding 125 percent, mobile cranes not tested in all configurations required by P-307, test paragraphs not performed, e.g., stability, loss of power).
3. Limit switch deficiencies (out of adjustment, mobile hoist limit not preventing the boom from extending, back-up limits inoperative, overload devices not operative).
4. Deficiencies to brake/clutch (brake not opening, hydraulic brake not releasing, inoperative brakes, brake not stopping the load).
5. Wire rope/load chain deficiencies (birdcaged/damaged wire rope, load chains twisted or installed with weld towards sprocket, incorrect safety factor, mis-reeving on drum).
6. Control deficiencies (loose contactors, air hoist control sticking in hoist position, hoist circuit losing power intermittently).
7. Boom deficiencies (boom will not retract fully, bent gusset, boom back stops preventing boom from lowering due to rust/corrosion in back stays)
8. Hook/Block/Sheave deficiencies (excessive sheave wear, sheaves not lubricated, hook thrust bearing not rotating under load, hook nut welded to hook shank).
9. Failed load test (won't lift/hold load, failed to trolley with load applied).
10. Mechanical miscellaneous (loose couplings, couplings out of alignment).

In general, the total number and severity of the deficient conditions found by the audit teams decreased over the last audit cycle. As in the previous three fiscal years, brake deficiencies continued to be the most prevalent unsatisfactory condition the audit teams found, accounting for 32 percent of all deficient conditions resulting in unsatisfactory cranes (virtually the same level as last year's 33 percent). Most of the brake deficiencies were due to settings out of approved specifications (25 percent total). Some of the brakes found out of adjustment were due to either no adjustment range being established by engineering, or the established range being too restrictive. Seven percent of the unsatisfactory cranes were due to mechanical deficiencies and inoperative brakes.

Load test related deficiencies remained as the next largest category of unsatisfactory cranes. Incorrect test procedures accounted for 15 percent. Examples of test directors not following NAVFAC P-307 appendix E test procedures were: not all components tested, incorrect test loads, test loads exceeding 125 percent, test paragraphs not performed (stability, loss of power). A positive indicator of program compliance was only 1 percent of the audit sample cranes failed the load tests.

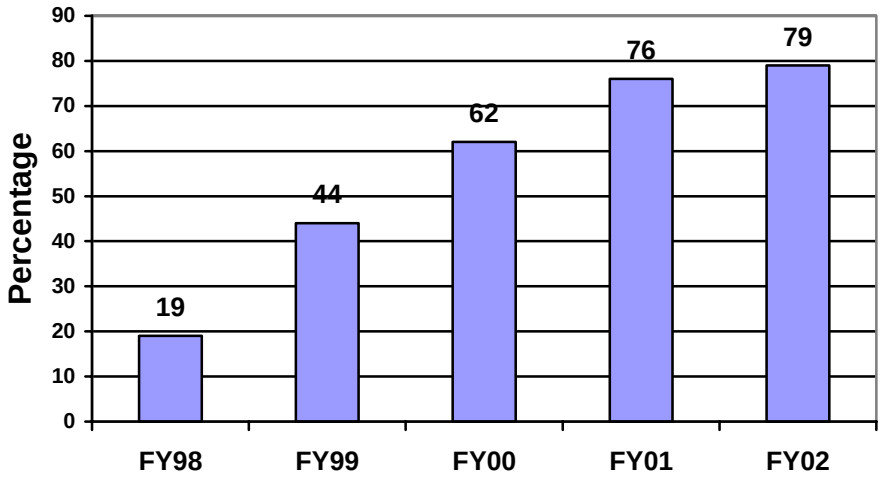
Deficient limit switches, (9 percent), wire rope/load chain deficiencies (6 percent), and controls systems (5 percent) were other common significant reasons for unsatisfactory cranes.

Other deficiencies of consequence found during audit crane inspections included: defective monorail system structural mounting supports, inoperable mobile crane hoist block upper limit switches, incorrectly configured jib cranes, and inoperable secondary limit switches on portal and bridge cranes.

## Activity Program Compliance Progress

Navy Crane Center does not formally rate activity weight handling programs. However, at the conclusion of each audit, the audit report letter categorizes the activity's program status into essentially one of two classifications. Either the program is a fundamentally "sound" program (includes programs where minor improvements are required), or a "deficient " program, which has deficiencies or serious deficiencies requiring significant and immediate action to correct. As a result of the continuing audit program, a favorable overall trend toward activity compliance has occurred. For the 139 activity programs audited, 79 percent were fundamentally compliant and 21 percent were deficient. This trend has also shown continual improvement in the past four audit years and major improvement from the initiation of the expanded audit program in FY98 when only 19 percent were considered sound.

### ACTIVITIES IN COMPLIANCE




For the WHE programs which were found to have deficiencies (not in compliance with the requirements of NAVFAC P-307 standards), significant common findings are listed below (in the order of most prevalent and widespread to least).

### Rigging

- Gear not properly marked per NAVFAC P-307.
- Uncertified gear.
- Mismatched rigging gear.
- Deficient rigging gear in service.
- Multiple leg sling assemblies marked incorrectly
- Re-inspection due dates expired.
- Unsafe rigging practices.
- Incorrect capacities marked on gear.
- Improper load test/slings tested at wrong test load percentage.

## Program Management

- No enforcement of the control/surveillance of contractor cranes.
- NCC mandatory training of inspectors, test directors and maintenance personnel not completed.
- No implementing instructions, instructions not current/complete
- Unauthorized crane alterations reportable to NCC.
- Mobile crane limit switch bypass control instructions not posted in crane cab.
- Work authorizing documents not issued.
- Activity using cranes with expired certifications.

## Inspection and Certification

- Crane condition inspection reports and maintenance inspection specification reports not filled out correctly, missing signatures, inspection attributes checked satisfactory when crane is not equipped or checked NA when the crane is equipped with the attribute.
- Method of defeating hoist brake to test mechanical load brake not described or documented, load brakes not tested, activity not aware the crane has a load brake.
- Incorrect and missing test paragraph numbers on load test certification, mobile cranes not tested in all applicable configurations, cranes tested with incorrect test load.
- NDT acceptance criteria not specified.
- Brake specification sheets not completed, specification data sheets not developed for specific cranes, incorrect specifications entered on data sheets.
- Repair documents do not adequately describe the work done.

## Crane Operations

- Operator license files lack essential documentation.
- Operator's Monthly Checklists (OMCL) not filled out properly.
- Operator's Daily Checklists (ODCL) not filled out properly.
- Operator's conducting un-safe crane operations
- Category 3 crane operators lack training.

## Crane Safety/Accidents

- Accidents not reported to NCC.
- Investigations not thorough.
- Lack of compliance with lock out/tag out procedures.

## Engineering

- Changes made without alteration development.
- Alterations were locally approved that should have been NCC approved.
- Locally approved alterations not submitted to NCC for information.
- Repair of equipment deferred without justification.